PROPER MAINTENANCE OF WHEEL CHOCKS AND NOSE JACKS

NIAGARA PLANT

1. Chocks and nose jacks must be kept in good condition.

2. Chocks and nose jacks must be available at all loading docks, tank farms and warehouses.

3. Chocks and nose jacks must be stored properly to prevent injury.
   - Unused chocks must be stored so as not to create a tripping hazard.

4. The transportation and distribution department will maintain a supply of nose jacks and chocks.

REFERENCES:

- Hazardous materials compliance manual.
- Plant transportation and distribution manual.

POSITIONING AND SUPORTING TANK AND VAN TRAILERS FOR LOADING/UNLOADING

Figure 1 - Tractor Attached to Trailer - NOT Free-standing

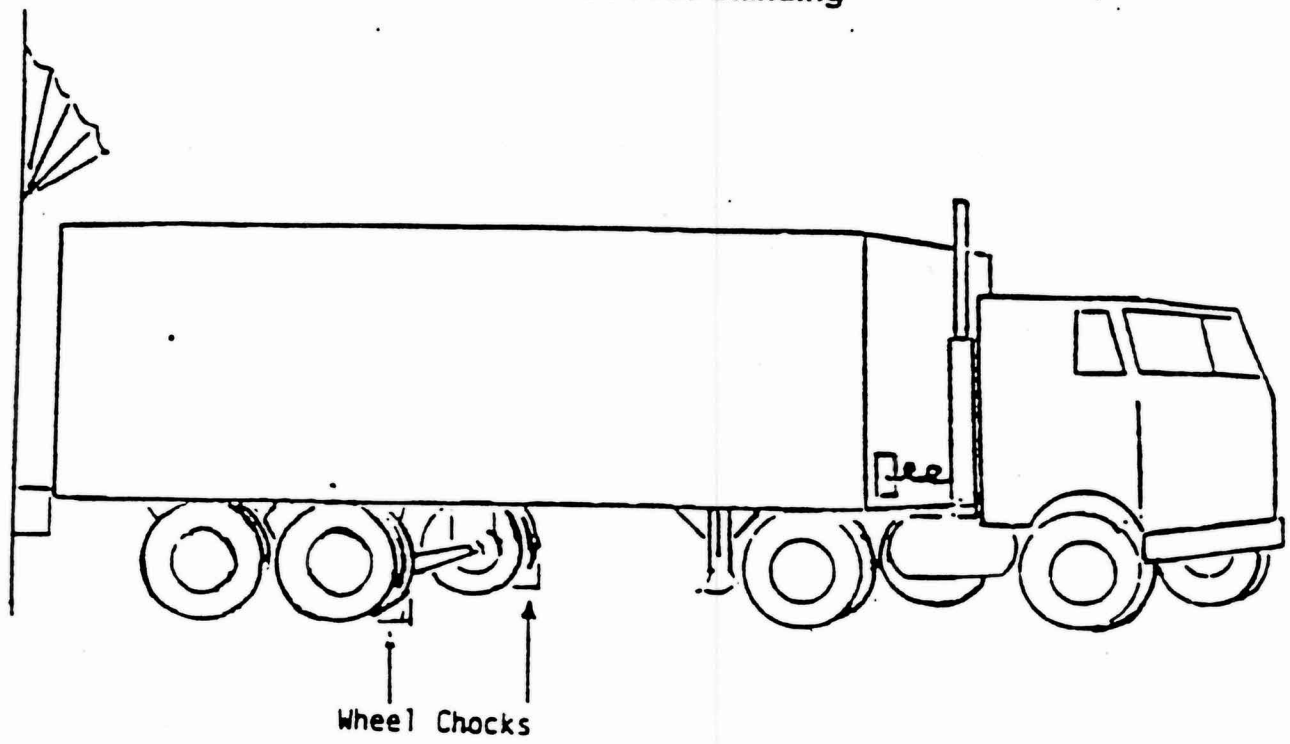


Figure 2 - Tractor Attached to Trailer - Free-Standing

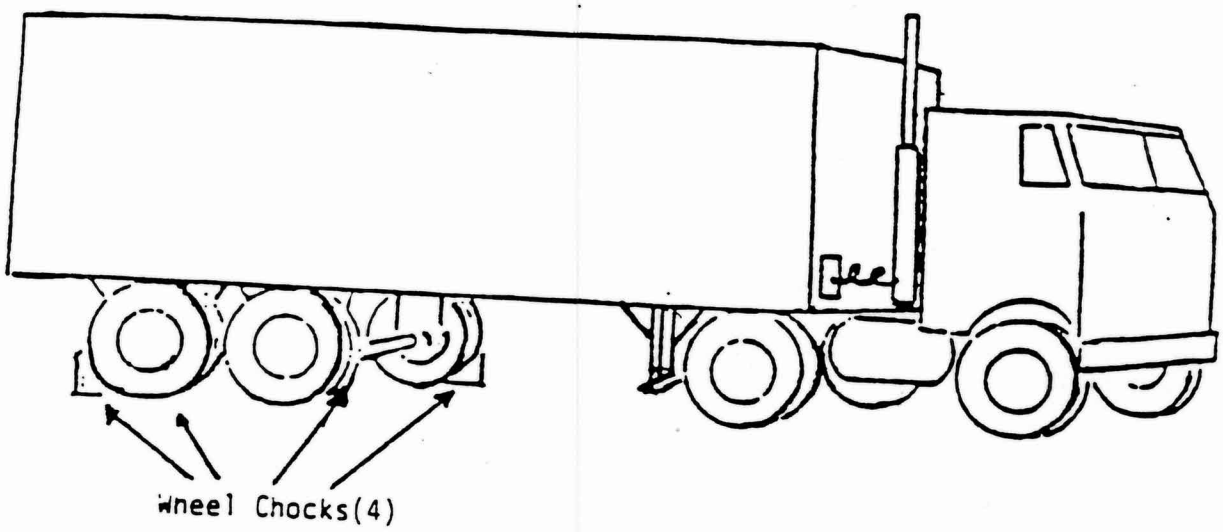
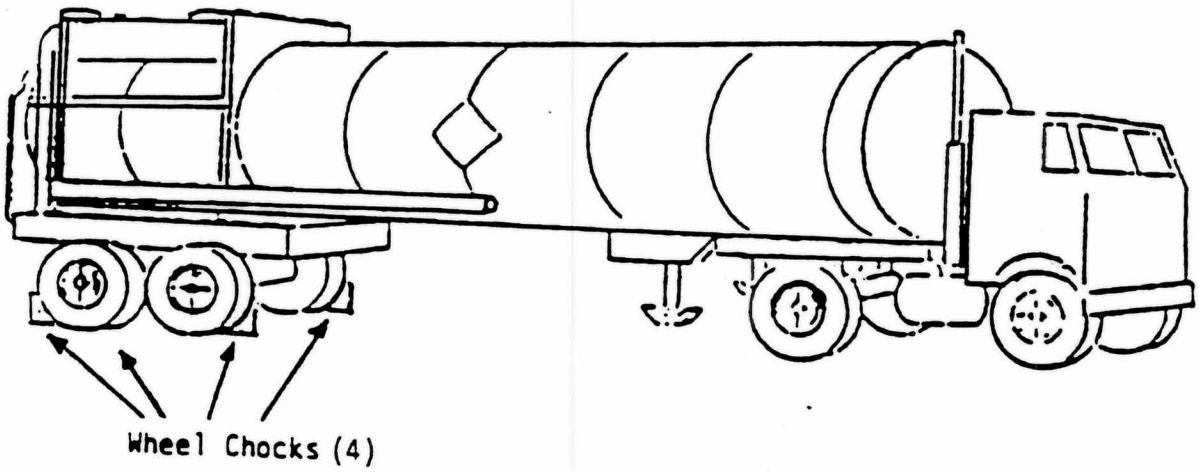


Figure 3 - Tractor Attached to Tanker - Free-Standing



Occidental Chemical Corporation

SAFETY REGULATION SR 14

CONTROLLED DOCUMENT

OXY

NIAGARA PLANT

"HOT WORK PERMIT (FLAME OR SPARK)"

WHAT Pertains to the safeguards which must be taken before the performance of any Hot Work.

WHERE All areas of the Niagara Plant.

WHO All Niagara Plant or contract personnel who perform Hot Work.

WHY To establish a standard procedure for the issuance of the "Hot Work Permit" to achieve safe work conditions and protect property by preventing fires and explosions.

SUMMARY

- Prior to the start of a job which requires hot work to be performed, a Hot work Permit must be issued by the supervisor responsible fort the area in which the Hot work is to be done.
- A combustible vapor test must be conducted to ensure that the area in which Hot work is to be performed is free of flammable vapors.
- Hot Work performed in hydrogen pipelines and processing areas requires additional precautions as outlined in this procedure.

DISTRIBUTION: ALL SUPERVISION	EFFECTIVE DATE: AUGUST 1991	AUTHORIZED BY:
APPROVED BY: DEPT HEADS, SAFETY DEPT., & SOP SAFETY COMMITTEE	SUPERSEDES: SOP 14D	G.F. BLASIUS
CONDITIONS: NO DEVIATIONS PERMITTED WITHOUT APPROVAL OF DEPARTMENT HEADS, MANAGERS INVOLVED, & SAFETY DEPARTMENT		

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I. DEFINITIONS

A. Hot Work

- Any welding; cutting; use of torches, salamanders, or other open flame.
- Any grinding, chipping, chiseling, sandblasting, drilling, or use of power hand tools to be used in areas or on equipment in which flammable gas (i.e., hydrogen), flammable vapors, or flammable liquids may be present.
- Any electrical, instrumentation or electrical power work in a Class I or Class II Building or area that necessitates working on "live" exposed wiring.
- Any other activity that may cause to ignite flammable gases or vapors, wood, paper, dust, rags or any other materials to ignite.

II. RESPONSIBILITY

A. It is the responsibility of the person in charge of each area to approve and exercise full control over any Hot Work to be done.

1. The person approving the Hot Work Permit (see Exhibit A) must:

   a. Specify the precautions to be taken as prescribed on the "Hot Work Permit" form.

   b. Ensure that specified precautions detailed on the "Hot Work Permit" are taken.

   c. Inform the personnel working under the "Hot Work Permit" to notify the issuer immediately if issued Permitted conditions change.

   d. Identify the electrical classification of the building/area where the work is to take place refer to Appendix I of this SR). If unsure, contact the area electric shop supervisor.

2. It is the responsibility of the supervisor of the worker(s) doing the "Hot Work" to:

   a. Ensure that worker(s) have obtained authorized clearance before starting the job, to include the signed "Hot Work Permit".

II. RESPONSIBILITY (continued)

3. It is the responsibility of the people scheduled to do the "Hot Work" to:

   a. Preplan and discuss the "Hot Work" to be done.

   b. Be signed in by operations personnel.

   c. Request a "Hot Work Permit" from the individual designated to issue the Permit in the department where the work is to be completed.

   d. Obtain the "Hot Work Permit" and complete any action items identified on the Permit before work can begin.

   e. Follow all facility SR's and special provisions agreed upon for the particular job to be completed.

4. Contractors:

   a. All provisions of SR 14 must be followed.

   b. No "Hot Work" will be started by a contractor without a "Hot Work Permit" first being issued.

   c. The project or field engineer responsible for the contractor is responsible to contact the department where the work is to be done to issue the "Hot Work Permit".

III. HOT WORK PROCEDURE

A. "Hot Work Permits" are required for the following activities and types of equipment which are potential sources of ignition:

1. Welding and cutting

2. torches and other open flames

3. Salamanders

4. Spark producing operations (drilling, chiseling).

5. Process equipment or pipelines containing or which may have contained hydrogen, or any other flammable gas or liquid.

III. HOT WORK PROCEDURE (Continued)

B. When the work to be done is in areas or on equipment that flammable gas (i.e.; hydrogen), flammable vapors or flammable liquids may be present, a "Hot work Permit" is necessary for grinding, chipping, chiseling , sandblasting, drilling and power hand tool operation or any other activity that may cause flammable gases or vapors, wood, paper, dust, rags to any other material to ignite.

C. "Hot Work Permits" are required in all electrically classified areas of the plant. (Refer to list of classified areas).

D. "Hot Work Permits" are not required for welding and maintenance shops where "Hot Work" is performed on a daily basis. If the work is to be done on equipment that has not been decontaminated, the SR 14 procedure must be followed.

E. The supervisor of the worker(s) assigned to do the work, knowing the tools and equipment needed to complete the job, will initiate the need for a "Hot Work Permit".

F. The combustible gas detector must be calibrated, tested and verified operational before using to issue a "Hot Work Permit".

G. If after taking the tests and the precautions as outlined in this SR 14, it is determined the work can proceed safely, the individual responsible for the equipment tc be worked on will complete the "Hot Work Permit" form.

H. In production areas this will be done by:

1. The process supervisor or -

2. The shift supervisor on the day shift during the normal work week with the knowledge of the process supervisor.

3. The shift supervisor responsible for the area during off shifts.

I. The Hot Work Permit form must be properly filled out and signed before the "Hot Work" can proceed.

J. The original of the "Hot Work Permit" will be given to the supervisor of the worker(s) assigned to do the job. He/she will review the precautions to be taken with the worker(s) who will do the job. The Original "Hot work permit" will remain at the work site until the job has been competed. At the completion of the job, the "Hot Work Permit" will be returned with the work order to the maintenance supervisor in charge of the worker(s).

III. HOT WORK PROCEDURE (Continued)

K. The process supervisor and the maintenance supervisor must retain a copy of the "Hot Work Permit" for one (1) month after the job has been completed.

L. Each "Hot Work Permit" expires at the end of the work period it is issued. A new "Hot Work Permit" is necessary at the beginning of each new work period.

1. If an unsafe condition occurs in the immediate or surrounding area of the "Hot Work" such as an accidental spill of flammable liquids, the "Hot Work" must be stopped immediately and cannot restart until a new "Hot Work" Permit is issued.

M. The "Hot Work Permit" must be signed by the person doing the work, process supervisor (or shift supervisor) and the supervisor of the worker(s).

IV. COMBUSTIBLE VAPOR TESTS

A. The combustible gas meter used to check areas for flammable gases is an extremely important instrument. It is imperative that it be kept in good operating condition, be serviced regularly, and the user fully understands its operation.

B. Combustible vapor tests are the responsibility of the department in charge of the work area or equipment. If in production areas, the testing will be done by the process or shift supervisor.

C. Equipment to be worked on must be isolated from other equipment before tests are taken. In addition, the equipment must be cleaned and decontaminated before tests are taken.

D. Tests must be taken in the surrounding area to include adjacent equipment, lower floors, sewers, floor drains and gutters.

E. **A "Hot Work Permit" will not be issued if the needle of the meter shows any deflection from zero. Should the needle deflect, further cleaning, decontamination and/or purging is necessary.**

V. AREA HOUSEKEEPING FOR "HOT WORK"

A. The removal of combative storage such as cartons, loose wood, open drums, papers, rags, rubbish and other combustible materials close enough to be ignited by hot metal and flying sparks must be removed to a safe area (a minimum of 35 feet from the work area).

B. Area housekeeping is the responsibility of the department supervisor of the area surrounding the "Hot Work".

VI. FIRE PROTECTION REQUIREMENTS

A. Assigned department/building fire extinguishers **will not be used as fire watch fire extinguishers**. If extra fire extinguishers are needed, the supervisor in charge of the work will make the necessary arrangements with Safety Shop personnel.

B. Many buildings and process areas are protected by automatic sprinkler or deluge protection. **"Hot Work" will not be Permitted in these buildings or areas while these systems are out of service**. Any deviation from this must be approved by the safety department and plant management.

C. Wood floors, railings and window sills that are in the line of falling hot metal/slag or falling sparks must be wetted down before "Hot Work" may begin. This is the responsibility of the department in charge of the equipment to be worked on.

D. Where "Hot Work" is being conducted above open grating, fire resistant blankets will be used to prevent hot slag and sparks from falling on equipment and personnel below.

VII. FIRE WATCH RESPONSIBILITIES

A. A fire watch shall be required by the supervisors responsible for authorizing the "Hot Work" whenever it is performed in locations where a fire may develop, or when any of the following conditions exist:

1. Combustible or flammable materials, liquids or vapors in areas closer than 35 feet to the point of operation.

2. Combustibles, flammable liquids or vapors are more than 35 feet away, but could be easily ignited by sparks.

3. Wall or floor openings within a 35 foot radius which expose combustible material in adjacent areas including concealed spaces in walls or floors.

4. Combustible materials are adjacent to the opposite side of partitions, walls, ceilings or roofs and are likely to be ignited by heat transfer via conduction or radiation.

VII. FIRE WATCH RESPONSIBILITIES (continued)

B. Fire Watch Responsibilities

1. The fire watch must be fully instructed on his/her responsibilities. It will be the responsibility of the process or shift supervisor to instruct the fire watch on his/her responsibilities and how to perform them. These include:

   a. The use of fire extinguishers.

   b. The use of the combustible gas meter if the "Hot Work" required continuous monitoring.

   c. Specific hazards of the area and the authority to stop the "Hot Work" operations if a hazardous condition should develop.

   d. Know where and how to sound the alarm in the event of a fire.

   e. Watching for fires in all exposed areas and attempt to extinguish them if possible and sound the alarm. The fire watch will notify the main gate of any fire regardless of severity.

   f. Maintaining the fire watch for at least thirty (30) minutes after completion of burning, cutting or welding operations to detect and extinguish smoldering fires.

VIII. EQUIPMENT AND TOOLS

A. All portable electrical equipment used by personnel doing the "Hot Work" must meet the electrical classification of the area where the work is being done.

B. Oxygen and acetylene cylinders and their associated hoses must be placed in a safe location where they will not be exposed to hot metal, slag, or flying sparks and properly secured.

C. The location of welding machines to be used in welding operations must be carefully selected. Combustible gas tests must be taken before the machines are started. Welding machines should never be located over or near sewer manholes.

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NIAGARA PLANT

IX. HYDROGEN "HOT WORK" PROCEDURE

A. This procedure has been developed to establish a standard procedure for working around hydrogen containing equipment or pipelines to achieve safe work conditions and protect worker(s) and property by preventing hydrogen fires and explosions.

B. Prior to the start of a job which requires work on or around hydrogen containing equipment or pipelines in designated hydrogen areas, a "Hot Work Permit" must be issued by the supervisor responsible for the area in which the "Hot Work" is to be done.

C. Before outage work begins communications to the Praxair Plant, Pyron, and all other pipeline customers must take place.

D. All provisions of SR 14 in Sections I through VIII, above, must be followed when working around hydrogen containing equipment or pipelines.

E. There are three separate conditions that exist when working with hydrogen. They are:

1. Hydrogen containing equipment or pipelines.

2. Work in the general vicinity of hydrogen containing equipment or pipelines.

3. Work during a process shutdown involving hydrogen related equipment or pipelines.

A description of procedures for the three cases follows:

F. Hydrogen Containing Equipment Or Pipelines

1. Work which requires opening of lines or equipment during operation must follow proper decontamination procedures for the line or equipment. A nitrogen purge will be maintained at all times when work is being done if blinds have not been installed.

2. Proper ventilation of hydrogen areas and equipment must be maintained at all times to avoid trapping hydrogen in enclosed spaces.

3. All work where metal-to-metal contact could occur requires constant monitoring by a combustible gas monitor.

4. Installation of hydrogen lines or equipment requires a combustible gas test along with entire line or piece of equipment.

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IX. HYDROGEN "HOT WORK" PROCEDURE (continued)

5. All work shall be performed with spark proof tools.

6. The proper blinding procedure is as follows:

   Close valve - purge - test - determine whether to blind or just purge the line. Department supervision is responsible for determining whether to blind or purge the lines.

G. Work in the General Vicinity of Hydrogen Containing Equipment or Pipelines

1. Precautions must be taken to ensure that no hydrogen leaks into equipment or pipelines around the work area that could cause a potential flash fire or explosion hazard because of the presence of hydrogen.

2. Department supervision is responsible to determine whether a "Hot Work Permit" is to be issued depending on the potential dangers in the area. Refer to "electrical classification of buildings and areas" elsewhere in this SR 14.

3. Constant monitoring with a combustible gas tester is required during any work where sparks may occur.

4. Jump starting vehicles is included in this section. A vehicle may be towed to a non-classified area to reduce potential hazards.

H. Work During a Process Shutdown Involving Hydrogen Related Equipment Or Pipelines

1. When no hydrogen is being produced (cell rooms down) proper decontamination procedures must be followed before any work begins.

2. A "Hot Work Permit" must be obtained before any work is done on the lines or equipment. Welding and burning is permitted in the production area only after a safe combustible test is performed.

3. First line breaks are not complete until hydrogen lines to Praxair, Pyron, and the A-1 Boiler House, along with the line from Praxair, are blinded off and the hydrogen hoses for each cell are disconnected and clamped during the shutdown.

EXHIBIT A
NIAGARA PLANT

OCCIDENTAL CHEMICAL CORPORATION

Hot Work Permit (Flame or Spark) 168715

JOB COPY

ISSUED TO

DETAILED DESCRIPTION OF JOB

DATE ISSUED | TIME | AREA OR BUILDING NO. AND CLASSIFICATION

THE ANSWERS AND ACTION TAKEN FOR THE FOLLOWING QUESTIONS MUST BE IN AGREEMENT WITH THE RULES OF THE STANDARD OPERATING PROCEDURE.	YES	NO
1. CAN THE JOB BE DONE OUTSIDE IN A SAFE AREA RATHER THAN IN THE BUILDING?	☐	☐
2. HAVE ALL PROCESS MATERIALS (SOLIDS, LIQUIDS, GASES) BEEN REMOVED FROM THE EQUIPMENT?	☐	☐
3. HAVE ALL LINES BEEN DISCONNECTED AND BLANKED?	☐	☐
4. HAS EXPLOSIMETER TESTS BEEN TAKEN? RESULTS _____ SIGNATURE OF TESTER _____	☐	☐
5. IS A FIRE WATCH REQUIRED?	☐	☐
IF SO, HAS FIRE WATCH BEEN ADVISED OF HIS DUTIES? SIGNATURE OF FIRE WATCH _____	☐	☐
6. IS FIRE EXTINGUISHER OR WATER HOSE AVAILABLE FOR FIRE WATCH?	☐	☐
7. CAN FLAME OR SPARKS IGNITE MATERIALS IN VICINITY OR ON LOWER FLOORS OR LEVELS?	☐	☐
8. HAVE WORKMEN BEEN GIVEN SPECIFIC SAFETY INSTRUCTIONS?	☐	☐
9. If work involves Confined Space Entry, are the rules of the Confined Space Standard Operating Procedure being adhered to and has Confined Space Entry permit been issued?	☐	☐
10. IS ADJACENT AREA AND EQUIPMENT SAFE?	☐	☐

11. SPECIAL PRECAUTIONS TO BE TAKEN _____

I HAVE PERSONALLY INSPECTED WORK SITE AND APPROVED THIS PERMIT.

DATE	TIME ISSUED	AM ☐ PM ☐	DATE	TIME	AM ☐ PM ☐

PERSON DOING WORK	SUPERVISOR (PROCESS)	SUPERVISOR OF WORKMEN

SIGNATURES

FORM NO 11-0407

D

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EXHIBIT B PLANT

ELECTRICAL CLASSIFICATION OF BUILDINGS AND AREAS
NIAGARA PLANT

DEFINITIONS

1. **CLASS** - TYPE OF ATMOSPHERE
   - I - GASES
   - II - DUSTS
   - III - FIBERS

2. **DIVISION** -DEGREE OF HAZARD
   1. HAZARDOUS ATMOSPHERE EXISTS UNDER NORMAL OPERATING CONDITIONS.
   2. HAZARDOUS ATMOSPHERE EXISTS ONLY UNDER ABNORMAL CONDITIONS.

3. **GROUP** - EXPLOSIVE PROPERTIES
   - A. ACETYLENE
   - B. HYDROGEN
   - C. ANESTHETICS
   - D. HYDRO-CARBONS
   - E. CONDUCTIVE METAL DUST
   - F. CONDUCTIVE COAL DUST
   - G. NON-CONDUCTIVE GRAIN DUST

BUILDING NO.	BUILDING TITLE AND AREA	ELECTRICAL CLASSIFICATION CL.	DIV.	GR.	HAZARDOUS CHEMICALS
B -AREA					
B-18	HYDROGEN COMPRESSOR ROOM	1	2	B	HYDROGEN
B YARD	15 FOOT RADIUS AROUND HYDROGEN CHILLERS, COMPRESSORS, COOLERS, STACKS, ROOMS AND PIPING FLANGES.	1	2	B	HYDROGEN
C AREA					
C2	PROCESS AREAS	1	2	D	BENZOYL CHLORIDE
	CONTROL ROOM	1	2	D	BENZOYL CHLORIDE
C23	CHLORINATOR BUILDING	1	2	D	TOLUENE
C41	DRUMMING FACILITY - 10 FEET FROM BENZOYL CHLORIDE DRUMMING STATION.	1	1	D	BENZOYL CHLORIDE
	- OTHER PROCESS AREAS	1	2	D	BENZOYL CHLORIDE
C45	EMERGENCY SCRUBBER	1	2	D	MISCELLANEOUS
	80C STORAGE TANKS (EAST OF C41)	1	2	D	BENZOYL CHLORIDE
	TANK FARM (NORTH OF C12)	1	2	D	BENZOYL CHLORIDE
	AREA 18 INCHES FROM GRADE, 10 FEET FROM CL.1, DIV. 2, GROUP. D OUTDOOR LOCATIONS.	1	2	D	SAME AS PROCESS

NIAGARA PLANT

BUILDING NO.	ELECTRICAL CLASSIFICATION BUILDING TITLE AND AREA	CL.	DIV.	GR.	HAZARDOUS CHEMICALS
EA	AREA 18 INCHES FROM GRADE, 10 FEET FROM DOORS AND OTHER OPENINGS OF A CL.I, DIV.2, GR. D. BUILDING	1	2	D	SAME AS BUILDING
D AREA					
D YARD	TOLUENE STORAGE TANKS				
	- SUMP PIT.	1	1	D	TOLUENE
	- DIKE AREA.	1	2	D	TOLUENE
	AREA 18 INCHES FROM GRADE, 10 FEET FROM CL.1, DIVISION 2, GROUP D, OUTDOOR LOCATIONS.	1	2	D	SAME AS PROCESS
E AREA					
E3	CENTRAL WAREHOUSE				
	AUTO SHOP-REPAIR AND SERVICE AREA				
	- PIT	1	1	D	GASOLINE
	- FLOOR LEVEL UP TO 18 INCHES	1	2	D	GASOLINE
E YARD	GASOLINE UNDERGROUND STORAGE TANK (NORTH OF E3)				
	- ANY PIT, BOX OR SPACE BELOW GRADE LEVEL, ANY PART OF WHICH IS WITHIN THE DIVISION I OR 2 CLASSIFIED AREA.	1	1	D	GASOLINE
	- UP TO 18 INCHES ABOVE GRADE LEVEL WITHIN A HORIZONTAL RADIUS OF 10 FEET FROM A LOOSE FILL CONNECTION AND WITHIN A HORIZONTAL RADIUS OF 5 FEET FROM A TIGHT FILL CONNECTION.	1	2	D	GASOLINE
E YARD	DIESEL FUEL UNDERGROUND STORAGE TANK (NORTH OF E3). VENT-DISCHARGING UPWARD.				
	- WITHIN 3 FEET OF OPEN END OF VENT, EXTENDING IN ALL DIRECTIONS	1	1	D	NO. 2 DIESEL FUEL
	- AREA BETWEEN 3 FEET AND 5 FEET OF OPEN END OF VENT, EXTENDING IN ALL DIRECTIONS.	1	2	D	NO. 2 DIESEL FUEL
E YARD	GASOLINE DISPENSING STATION (NORTH OF E3)				
	- THE AREA WITHIN A DISPENSE ENCLOSURE UP TO 4 FEET VERTICALLY ABOVE THE BASE EXCEPT THE AREA DEFINED AS DIVISION 2. ANY AREA WITHIN A NOZZLE BOOT.	1	1	D	GASOLINE
	- 20 FEET FROM DISPENSER UP TO 18 INCHES FROM GRADE.	1	2	D	GASOLINE
	- 10 FEET FROM TANK FILL PIPE UP TO 18 INCHES FROM GRADE.	1	2	D	GASOLINE

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BUILDING NO.	ELECTRICAL CLASSIFICATION BUILDING TITLE AND AREA	CL.	DIV.	GR.	HAZARDOUS CHEMICALS
E YARD	DIESEL FUEL DISPENSING STATION (NORTH OF E3)				
	- THE AREA WITH A DISPENSER UP TO 4 FEET VERTICALLY ABOVE THE BASE EXCEPT THE AREA DEFINED AS DIVISION 2. ANY AREA WITHIN A NOZZLE BOOT.	1	1	D	NO. 2 DIESEL FUEL
	- 20 FEET FROM DISPENSER UP TO 18 INCHES FROM GRADE.	1	2	D	NO. 2 DIESEL FUEL
	- 10 FEET FROM TANK FILL PIPE UP TO 18 INCHES FROM GRADE.	1	2	D	NO. 2 DIESEL FUEL
E YARD	PROPANE DISPENSING (NORTH OF E3)				
	- WITHIN 5 FEET IN ALL DIRECTIONS FROM CONNECTIONS REGULARLY MADE OR DISCONNECTED FOR PRODUCT TRANSFER.	1	1	D	PROPANE
	- BEYOND 5 FEET BUT WITHIN 15 FEET IN ALL DIRECTIONS FROM A POINT WHERE CONNECTIONS ARE REGULARLY MADE OR DISCONNECTED AND WITHIN THE CYLINDRICAL VOLUME BETWEEN THE HORIZONTAL EQUATOR OF THE SPHERE AND GRADE.	1	2	D	PROPANE
ARD	PROPANE STORAGE				
	- WITHIN 5 FEET IN ALL DIRECTIONS FROM POINT OF DISCHARGE FOR GAUGE VENT OPENINGS.	1	1	D	PROPANE
	- BEYOND 5 FEET BUT WITHIN 15 FEET IN ALL DIRECTIONS FROM POINT OF DISCHARGE.	1	2	D	PROPANE
	- WITHIN DIRECT PATH OF DISCHARGE OF RELIEF DEVICE.	1	1	D	PROPANE
	- WITHIN 5 FEET IN ALL DIRECTIONS FROM POINT OF DISCHARGE OF RELIEF DEVICE.	1	1	D	PROPANE
	- BEYOND 5 FEET BUT WITHIN 15 FEET IN ALL DIRECTIONS FROM POINT OF DISCHARGE EXCEPT WITHIN THE DIRECT PATH OF DISCHARGE.	1	2	D	PROPANE
F AREA					
F51	MONITORING STATION				
	- FLUME PIT	1	2	D	MISCELLANEOUS

OXY NIAGARA PLANT

BUILDING NO.	ELECTRICAL CLASSIFICATION BUILDING TITLE AND AREA		DIV.	GR.	HAZARDOUS CHEMICALS
G AREA					
G YARD	15 FOOT RADIUS AROUND HYDROGEN PIPING (THIS INCLUDES THE 47TH STREET PIPE BRIDGE).	1	2	B	HYDROGEN
H AREA					
	H20 LIFT STATION - PUMP AREA	1	2	D	MISCELLANEOUS
H YARD	- 15 FOOT RADIUS AROUND HYDROGEN PIPING (THIS INCLUDES THE 47TH STREET PIPE BRIDGE)	1	2	B	HYDROGEN
K AREA					
	K110 DEVELOPMENT PILOT PLANT	1	2	D	MISCELLANEOUS
	K26 PILOT PLANT DRUM STORAGE	1	2	D	MISCELLANEOUS
	K28 LIFT STATION - PUMP AREA	1	2	D	MISCELLANEOUS
ARD	AREA 18 INCHES FROM GRADE, 10 FEET FROM DOORS AND OTHER OPENINGS OF A CL.I, DIV. 2, GR. D, BUILDING	1	2	D	SAME AS BUILDING
M AREA					
	M15 SEMI-COMMERCIAL - ALL PROCESS AREAS	1	2	D	MISCELLANEOUS
	M22 FLEXIBLE FACILITIES - ALL PROCESS AREAS	1	2	D	MISCELLANEOUS
	M26 CENTRAL WASH FACILITY - WASH AREA.	1	1	D	MISCELLANEOUS
M YARD	AREA 18 INCHES FROM GRADE, 10 FEET FROM DOORS AND OTHER OPENINGS OF A CL.I, DIV. 2, GR. D, BUILDING	1	2	D	SAME AS BUILDING

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BUILDING NO.	ELECTRICAL CLASSIFICATION BUILDING TITLE AND AREA	CL.	DIV.	GR.	HAZARDOUS CHEMICALS
M YARD	AREA 18 INCHES FROM GRADE, 10 FEET FROM CLASS I, DIVISION 2, GROUP D OUTDOOR LOCATIONS.	1	2	D	SAME AS PROCESS
M YARD	- TANK FARM SOUTH OF M15.	1	2	D	COD
	- TANK FARM WEST OF M22, SOUTH OF M23.	1	2	D	MISCELLANEOUS
M YARD	WEST OF M26. - 3 FEET AROUND SUMP PUMP. - 10 FEET FROM SUMP.	1	1	D	MISCELLANEOUS
N AREA					
N6	PARACHLOROTOLUENE PROCESS AREA	1	2	D	OCT, PCBTF MCT, PCT
N7	BATCH PHOTOCHLORINATORS	1	2	D	PCBTC, PCT, OCT
N8	CONTINUOUS PHOTOCHLORINATORS	1	2	D	PCBTC, PCT, OCT
N16	PCBTF FILTER HOUSE	1	2	D	PCBTC, PCT, OCT
7	3,4 DCBTF RECEIVERS	1	2	D	3,4-DCBTF
20 DCT	ACID PLANT	1	2	D	TOLUENE, OCT, PCT,
N21 DCT	MCT/LPF	1	2	D	TOLUENE, OCT, PCT,
N23	MCT REFRIGERATION	1	2	D	OCT
N YARD	JUMBO STORAGE TANKS SOUTHEAST OF N6, SOUTH OF N21.	1	2	D	OCT, PCT, MCT PCBTF, PCBTC
	COLUMNS AND RELATED EQUIPMENT	1	2	D	OCT, PCT, MCT PCBTF, 3,4-DCBTF
	TANK FARMS SOUTH, EAST AND WEST OF N6.	1	2	D	PCBTF, PCBTC, PCT, OCT, MCT, 3,4-DCBTF, TOLUENE
	TANK FARM EAST OF N21	1	2	D	PCBTF, MCT

BUILDING NO.	ELECTRICAL CLASSIFICATION BUILDING TITLE AND AREA	CL.	DIV.	GR.	HAZARDOUS CHEMICALS
N YARD	MURIATIC ACID CARBON BEDS	1	2	D	OCT, PCT, MCT, TOLUENE
	EVS TOWER	1	2	D	
	RECOVERED ACID STORAGE TANKS EAST OF N13.	1	2	D	
	LPF HYPO-CHLORINE KILL TANKS EAST OF N13.	1	2	D	
	NEUTRALIZATION - SOUTH OF N13	1	2	D	MISCELLANEOUS
	ALL RAILROAD AND TANK CAR LOADING FACILITIES FOR FLAMMABLE MATERIALS.	1	2	D	TOLUENE/MISC.
	AREA 18 INCHES FROM GRADE, 10 FEET FROM DOORS AND OTHER OPENINGS OF A CL.I, DIV. 2, GR. D.	1	2	D	SAME AS BUILDING
	AREA 18 INCHES FROM GRADE, 10 FEET FROM CLASS I, DIVISION 2 GROUP D, OUTDOOR LOCATIONS.	1	2	D	SAME AS PROCESS
T AREA					
T27	DRUM STORAGE AREA	1	2	D	MISCELLANEOUS
T YARD	AREA 18 INCHES FROM GRADE, 10 FEET FROM CLASS I, DIVISION 2, GROUP D, OUTDOOR LOCATIONS.	1	2	D	SAME AS PROCESS
U AREA					
U42	MISCELLANEOUS WASTE STORAGE	1	2	D	MISCELLANEOUS SOLVENTS
U YARD	WASTE WATER STORAGE FACILITY - TANK FARM	1	2	D	MISCELLANEOUS
	- TANK CAR UNLOADING.	1	2	D	MISCELLANEOUS
U YARD	TOLUENE STORAGE TANK	1	2	D	TOLUENE
	- SUMP PIT	1	1	D	TOLUENE
	- DIKE AREA	1	2	D	TOLUENE
U YARD	AREA 18 INCHES FROM GRADE, 10 FEET FROM CLASS I, DIVISION 2, GROUP D, OUTDOOR LOCATIONS.	1	2	D	SAME AS PROCESS

B106

BUILDING NO.	ELECTRICAL CLASSIFICATION BUILDING TITLE AND AREA	CL.	DIV.	GR.	HAZARDOUS CHEMICALS
AREA					
V70	ALKYL PHOSPHOROUS PAPER AND PUMP - NORTH SECTION - ALL AREAS	1	2	D	AMYL ALCOHOL
	- SOUTH SECTION - ALL AREAS MANGANESE HYPO	1	2	D	AMYL ALCOHOL
	-HYPO REACTOR	1	1	B	HYDROGEN
V84	- SODIUM HYPO PHOSPHITE - S.W. CORNER - REACTOR ROOMS FIRST AND SECOND FLOORS.	1	2	B	HYDROGEN PHOSPHINE
V YARD	AREA 18 INCHES FROM GRADE, 10 FEET FROM DOORS AND OTHER OPENINGS OF A CL.I, DIV. 2, GR. D. BUILDING.	1	2	D	SAME AS BUILDING
V YARD	RCRA PAD SOUTH OF V81	1	2	D	MISCELLANEOUS

Occidental Chemical Corporation NIAGARA PLANT

SAFETY REGULATIONS SR 29

"TANK CAR RECEIVING, LOADING & SHIPPING"

"TANK CAR RECEIVING, LOADING & SHIPPING"

WHAT: PROCEDURES REQUIRED FOR SAFELY RECEIVING, INSPECTING LOADING AND UNLOADING RAIL TANK CARS.

WHERE: ALL RAILROAD FACILITIES THAT ARE PART OF THE NIAGARA PLANT.

WHO: ALL OCCIDENTAL PERSONNEL RESPONSIBLE FOR LOADING AND UNLOADING RAILROAD TANK CARS. ALSO APPLIES TO MAINTENANCE OPERATIONS OR LOGISTICAL SERVICES PERSONNEL WHO WORK ON OR NEAR THE TRACKS.

WHY: TO PROTECT PERSONNEL, TO PREVENT DAMAGE TO LOADING AND UNLOADING FACILITIES AND TO INSURE SAFE SHIPMENT AND SAFE CONTAINMENT OF TANK CAR CONTENTS FOR TRANSPORTATION.

SUMMARY:

- ALL PERSONNEL INVOLVED IN LOADING/UNLOADING OPERATIONS ARE RESPONSIBLE FOR FOLLOWING THE PROCEDURES NECESSARY FOR SAFE HANDLING, CONTAINMENT AND SHIPMENT OF TANK CAR CONTENTS.
- ALL PROTECTION DEVICES MUST BE IN PLACE BEFORE ANY LOADING OR UNLOADING ACTIVITY CAN OCCUR. THIS INCLUDES:
  - BLUE FLAG - PROPERLY TAGGED AND PLACED AT CORRECT DISTANCE.
  - TWO APPROVED WHEEL CHOCKS.
  - HAND BRAKE SET

DISTRIBUTION: ALL SUPERVISION	EFFECTIVE DATE: FEBRUARY 1991 REVISED AUGUST 1991	AUTHORIZED BY:
APPROVED BY: DEPT. HEADS, SAFETY DEPT., & SOP SAFETY COMMITTEE	SUPERSEDES: SOP 29C	G.F. BLASIUS G.F. Blasius
CONDITIONS: NO DEVIATIONS PERMITTED WITHOUT APPROVAL OF DEPARTMENT HEADS, MANAGERS INVOLVED, & SAFETY DEPARTMENT		

NIAGARA PLANT

⇒ Prior to opening a car for inspection, removal of the manway bolts, etc., the loader must ensure the car is not under pressure. A pressure gauge may be used to verify pressure prior to opening of the tank.

⇒ Locked and tagged derail device or locked & tagged switches.

- Tank cars must be inspected before any loading or unloading activity takes place. This includes:

  ⇒ Completing the tank car pre-loading/unloading checklist.

  ⇒ Checking For A Red Tag.

  ⇒ Identifying tank contents.

  ⇒ Tank cars must have four numbered placards which bear proper DOT information.

  ⇒ Certain products require as many as eight (8) placards, e.g. : Thionyl.

  ⇒ A means of continuous monitoring, or a trained employee must be in the immediate area, during all loading and unloading activities.

  ⇒ Loading and unloading procedures must be followed in the correct order.

I. DEFINITIONS

- **Derail Device** - a device which causes an oncoming car to run off the track.

- **Rail Wheel Chock** - a metal wedge-type device that is placed between the rail wheel and the rail surface. A chock has a flag which protrudes away from the track toward the brakeman walkway to make the brakeman aware of its presence.

- **Blue Flag** - a blue flag bearing the words "stop - tank car connected" or "stop - men at work". The word "stop" must be in letters which are 4" high. The other words must be in letters 2" high. The letters must be white on a blue background. Blue flags should be tagged the same as noted in **"Barricades - SR 8"**.

- **Red Tag** - A Red Tag Which Indicates That A Defect Has Been Found Concerning The Tank Car By The Tank Car Maintenance Inspector.

- **Outage Space** - sufficient empty space in the interior of the tank to prevent leakage or distortion when the contents expand due to warming temperatures.

I. DEFINITIONS (continued)

- **Heel** - any contents which remain in the tank after it has been unloaded.
- **Car Stopper Block** - a device (usually temporarily used) that is bolted to both rails of the track.
- **Switch** - as device that allows tank cars to change tracks and subsequently blocks unwanted movement.

II. PROCEDURE

This SR applies to all rail car activities and must be followed in addition to all other applicable SR's. Step 1 of this SR also applies to maintenance, operations and logistical services personnel working on or near tracks where switching cars could get pushed into their immediate work area. T & D workers involved in moving railroad cars should also be familiar with this SR.

A. Place The Blue Flag In Position

Place the blue flag at the front end of the track on the brakeman walkway side of the car at least 5 ft. ahead of the derail. The front end of the track is the area where the track originates nearest the entry switch (Fig. 1). The blue flag prevents access to the car(s) being loaded/unloaded. It does not prevent access to adjacent tracks.

If it is not possible to place the blue flag at the entry switch, place it on the track involved, leaving at least 50 feet of unoccupied space (where possible) between the car(s) being protected and the blue flag (Fig. 2)

Maintenance, Operations and Logistical Services personnel working on or near tracks where switching cars could get pushed into their immediate work area, must place their Blue Flag bearing the words "**STOP - MEN AT WORK**", with the attached, signed tag at least 50 feet ahead of their immediate work area. The Blue Flag must be in place before any work begins.

B. Install Derail Device

Position the derail device on the track, lock and tag the derail device.

I. **PROCEDURE** (Continued)

C. Place Wheel Chocks In Position.
Wedge two approved wheel chocks against a wheel or wheels placed on the brakeman walkway side of the car to prevent the car from moving in either direction.

If more than one car in a string of cars is to be loaded/unloaded, each such car must be properly chocked.

D. **Set The Hand Brake**

Engage the hand brake on each car to be loaded/unloaded before any work takes place.

NOTE: A car or string of cars left on tracks for storage do not require wheel chocks or hand brakes unless they are placed on a grade. If chocking is necessary, one chock may suffice to prevent the car from moving down grade.

E. **When All Car Protection Devices Are In Place, You Can Begin Work**

F. **Car Protection Devices Are To Be Removed**:

- A railroad brakeman must never remove any car protection devices unless he put them in place for his personal protection.

G. **Remove Derail Protection Devices, Blue Flags And Wheel Chocks Only When**:

- Work is completed or interrupted and all loading lines disconnected and access platforms removed.

  Before you schedule the car(s) for any movement, double check to assure that loading lines have been disconnected and removed from the car and that access platforms have been retracted from the car. All individuals involved with the movement should make this check:

  - Remove The Wheel Chocks
  - Disengage The Hand Brake
  - Remove Derail Device
  - Remove Blue Flag

H. **Care Of Equipment**

Each department is responsible for providing adequate maintenance of their equipment and providing proper storage of it. Proper maintenance and storage reduce damage to equipment and reduce the possibility of tripping hazards along tracks.

I. **Before A Tank Car Can Be Loaded, The Loader Must:**

1. **Make A Pre-Trip Inspection Of The Tank Car.**

   - Select the correct inspection form for the type of car you are inspecting.
   - Wear all safety equipment prescribed by the department.
   - Check the safety equipment. It should be free of structural damage and in good working order (Figure 3).
   - Check the product containment equipment. It should be In good working order. (Figure 4).

2. **Check All Stenciling On The Car.**

   - Car number, capacity, warning information, operation instructions, test dates, car specification information, etc., must appear (Figure 5 and Figure 6).
   - All stenciling must be clear and easy to read.

3. **Check test dates.**

   - If you discover a car with an expired test date, notify your supervisor. Do <u>not</u> load the car. Check with your supervisor.

4. **Check for a Red Tag.**

   - If a Red Tag is present, do <u>not</u> load the car. Check with your supervisor.

5. **When Opening Cars, Always Verify Pressure Versus No Pressure According To Department Procedures**

   - When opening a tank car, always assume that the tank is under pressure.
   - Bleed the tank before removing any piping, opening any valves or loosening any bolts. A pressure gauge may be used to verify pressure prior to opening the tank.

6. **Verify That The Correct Car Is Used For The Material Being Loaded Or Unloaded**

   - Verify if a heel is present in the tank car. When contents remain, identify it to make sure it is the same as material being loaded. Loading cannot commence until the verification Is completed.
   - Perform internal inspection as required by procedures.

7. **Complete The Pre-Loading Checklist.**

   - Sign the checklist if the car passes inspection.
   - Do not load a car if any of the items on the checklist are rated "bad".
   - Notify your supervisor when a car is not suitable for use.

J. **When Loading A Tank Car, Follow Written Department Procedures.**

1. Wear proper safety equipment prescribed by the department.

K. **Before A Tank Car Can Be Unloaded, The Unloader Must:**

2. Check the 4-digit D.O.T. Number.

   - It must match the number of the product that was shipped to the plant.

3. Install Car Protection Devices (see Section A of this SR).

Use Of The Blue Flag, Wheel Chocks, And Other Railroad Car Protection Devices.

FIGURE 1

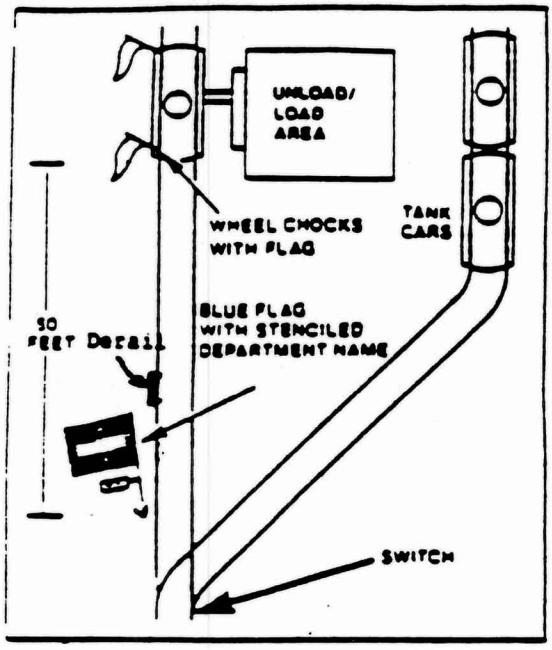
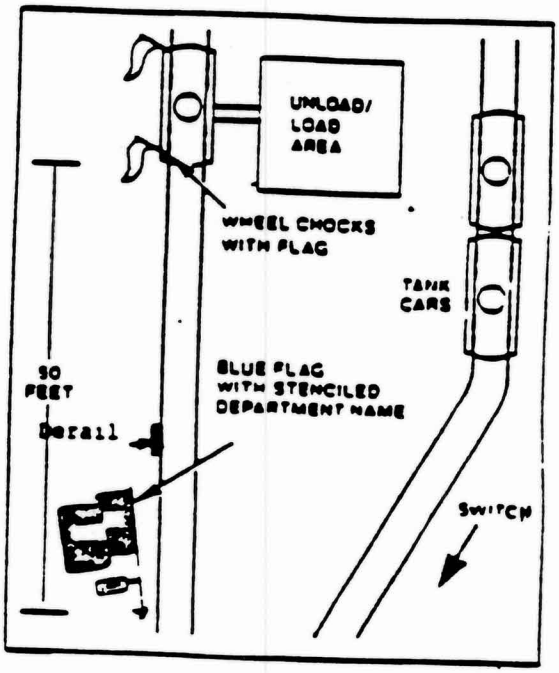


FIGURE 2



II. **PROCEDURE** (continued)

3. Check The Tank Car For A Red Tag

   - Prior to unloading a car with a Red Tag, contact supervision to determine its disposition and any special precautions to be taken.

4. Complete the tank car inspection-loading/unloading report.

   - Perform the unloading inspection carefully and accurately.

   - Do not unload if any of the items on the checklist are rated "bad".

   - Notify your supervisor when a car is not suitable for unloading.

NOTE: Red tagged cars are not suitable for shipment because of D.O.T. Regulations that are applicable to over-the-road shipment; may be used for storage in Plant providing the reasons for tagging is explicit on the tag and a variances is provided prior to loading such a car.

5. Identify tank contents to determine if it is the product that was requested to be shipped to the plant.

   - When opening a tank car, always assume that the tank is under pressure.

   - Bleed the tank before removing any piping, opening any valves or loosening any bolts. A pressure gauge may be used to verify pressure prior to opening the tank.

L. **To Unload A Tank Car, Follow Written Department Procedures**

M. **Variances**

- If any of the provisions of this procedure cannot be strictly adhered to, a **Variance** must be requested.

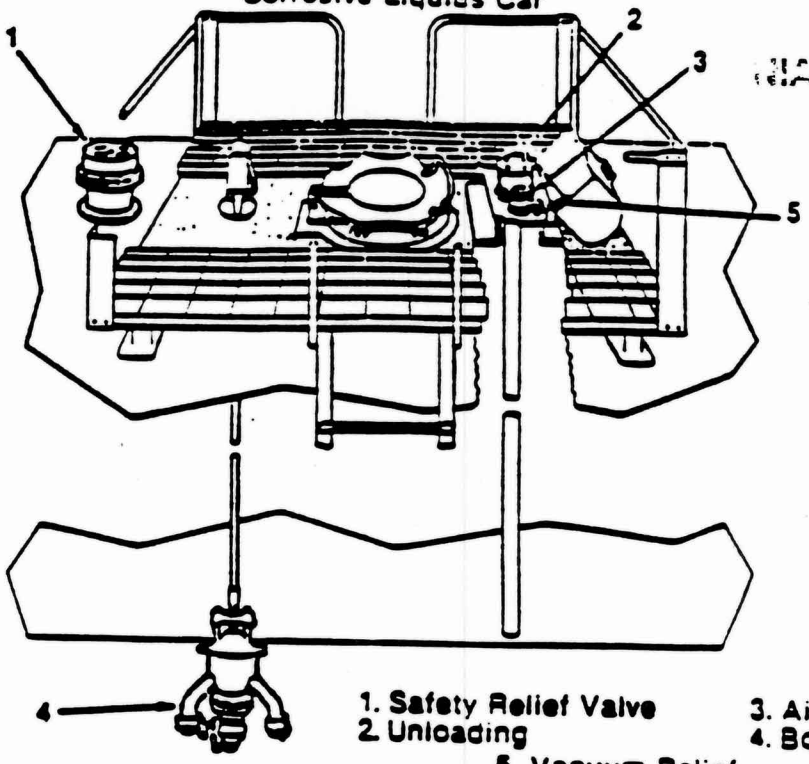
REFERENCES

- HAZARDOUS MATERIALS COMPLIANCE MANUAL.

FIGURE 3 -- PARTS IDENTIFICATION

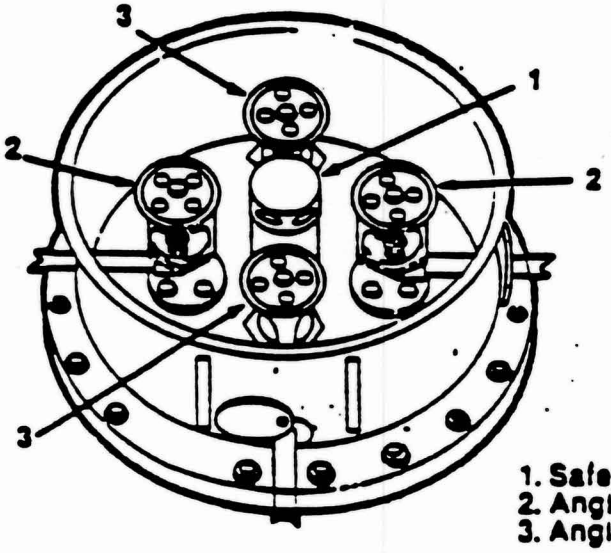
Receiving, Inspecting, Loading And Unloading Rail Tank Cars.

Corrosive Liquids Car



1. Safety Relief Valve
2. Unloading
3. Air
4. Bottom
5. Vacuum Relief

Chlorine Car

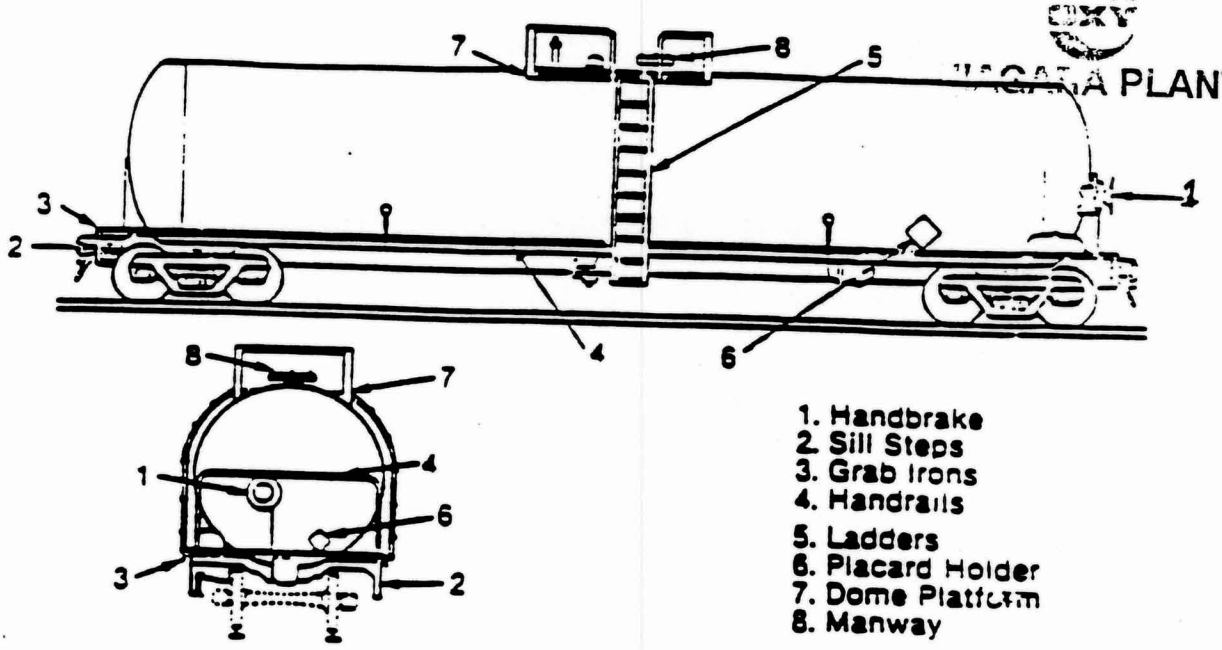


1. Safety Relief Valve
2. Angle Valves—Vapor
3. Angle Valves—Liquid

FIGURE 4 -- PARTS IDENTIFICATION

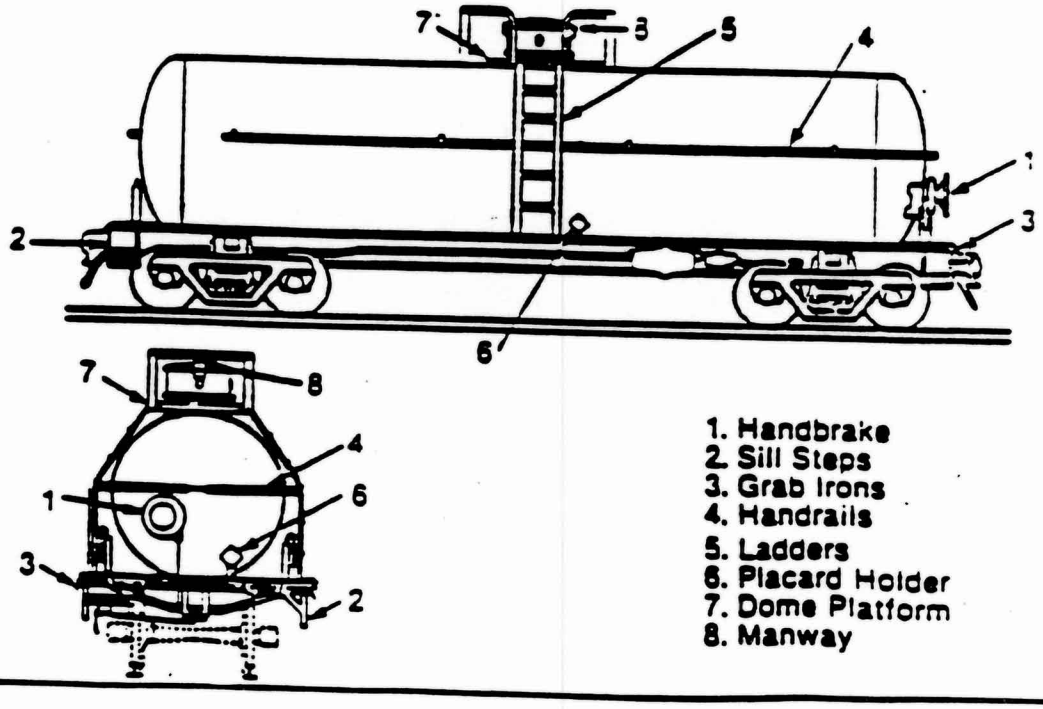
Receiving, Inspecting, Loading And Unloading Rail Tank Cars

Corrosive Liquids Car



1. Handbrake
2. Sill Steps
3. Grab Irons
4. Handrails
5. Ladders
6. Placard Holder
7. Dome Platform
8. Manway

Chlorine Car

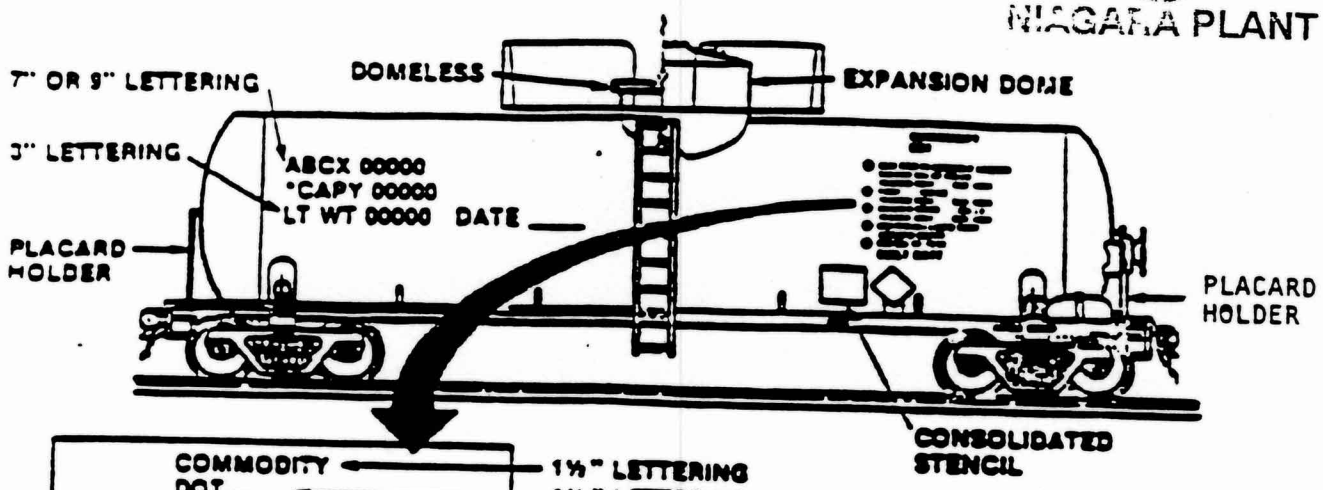


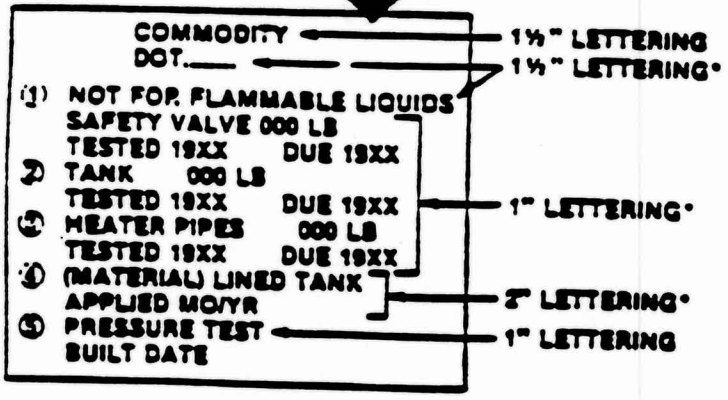
1. Handbrake
2. Sill Steps
3. Grab Irons
4. Handrails
5. Ladders
6. Placard Holder
7. Dome Platform
8. Manway

FIGURE 5 -- TANK CAR STENCIL DIAGRAM

Receiving, Inspecting, Loading And Unloading Rail Tank Cars

Corrosive Liquids Tank Car





* STENCILING REQUIRED BY D.O.T. EVERY TANK CAR SHOULD HAVE ALL STENCILING ACCURATELY AND LEGIBLY PRINTED ON THE TANK CAR BEFORE IT IS SHIPPED.

Stencil No.	Exception
1	OMIT ON CARS EQUIPPED WITH SAFETY VALVE
2	NO TANK PRESSURE TEST REQUIRED ON CARS FOR MURIATIC ACID
3	IF NO INTERIOR COILS SHOW ONLY "EXT COILS"
4	SHOW LINING MATERIAL ON CARS USED FOR SULFURYL CHLORIDE, BENZOYL CHLORIDE, THIONYL CHLORIDE, PHOS OXY, MURIATIC ACID, CAUSTIC SODA, CAUSTIC POTASH, PHOS. ACID, PARACHLORO BTF, DIPOTASSIUM PHOSPHATE, R-2 SOLUTION, SODIUM CHLORATE, TKPP, TRI. PRESSURE TEST NOT REQUIRED ON LEAD OR RUBBER LINED CARS.

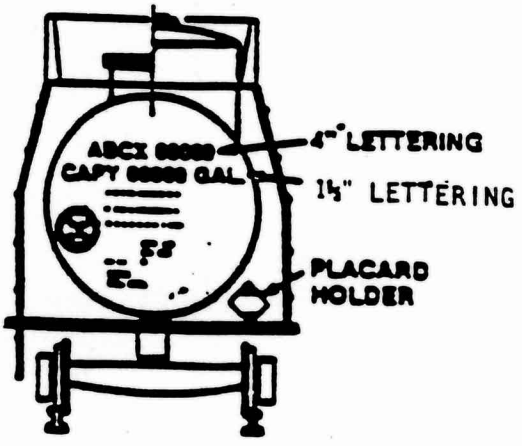
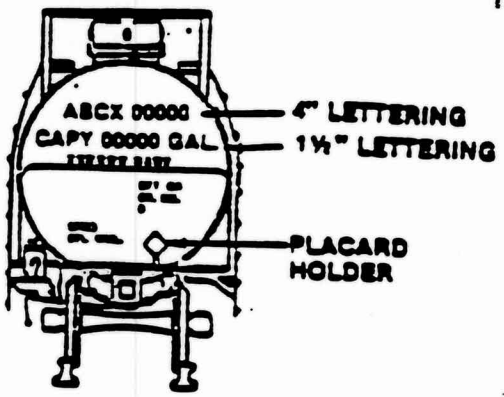


FIGURE 6 -- TANK CAR STENCIL DIAGRAM

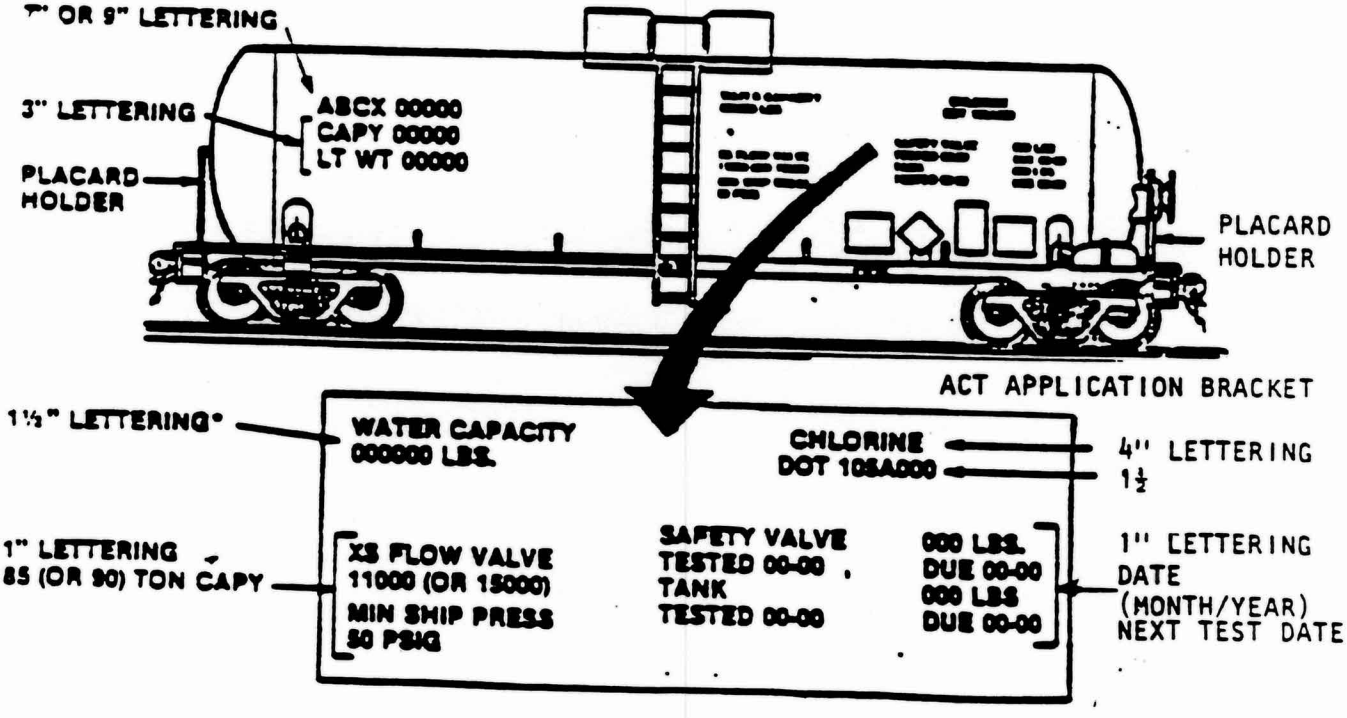
Receiving, Inspecting, Loading And Unloading Rail Tank Cars

Chlorine Tank Car

STENCIL BOTH ENDS OF CAR AS SHOWN



A-END



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